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EXAMINER	
RAO, ANAND SHASHIKANT	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/620,744	SRINIVASAN, SRIDHAR	
	Examiner	Art Unit	
	Andy S. Rao	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2007 and 08 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-5,9-14,16-26 and 28-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5,9-14,16-26 and 28-41* is/are rejected.

7)☒ Claim(s) *42-43* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's arguments with respect to claims 1, 3-5, 9-14, 16-26, 28-43 as filed in 7/31/07 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3-5, 9-14, 16-26, 28-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al., (hereinafter referred to as "Nguyen") in view of Malvar et al., (hereinafter referred to as "Malvar"), and further in view of Kikuchi et al., (hereinafter referred to as "Kikuchi").

Nguyen discloses a digital media signal processing system (Nguyen: figures 3A-3B) comprising: a block transform-based codec for compressively encoding transform-coding blocks of a digital media signal to form a compressed representation of the digital media signal at encoding (Nguyen: column 2, lines 25-30), and to decode blocks from the compressed representation to reconstruct the digital media signal at decoding (Nguyen: column 2, lines 30-35); a pre-processing filter for applying to overlapping blocks that overlap adjacent of the transform-coding block of the digital media signal prior to encoding by the block transform-based codec to effect spatial-domain lapped transform of the digital media signal (Nguyen:

column 4, lines 25-40); and a post-processing filter for applying to overlapping blocks that overlap adjacent of the decoded blocks after decoding by the block transform-based codec (Nguyen: column 4, lines 45-65), as in claim 1. However, Nguyen fails to disclose wherein the post- processing filter is not an inverse of the pre-processing filter or wherein the pre- processing filter is more relaxed and the post-processing filter is more aggressive relative to filters that are respectively inverses of the other, as in the claim. But Malvar discloses that having a post processing filter that is not a direct inverse of a pre-processing filter (Malvar: column 2, lines 5-25) for a lapped orthogonal transform (Malvar: column 5, lines 5-15) is known and advantageous especially if one wants to also account for channel distortion (Malvar: column 7, lines 60-67). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the Malvar teaching of using non-inverse post processing filters into the Nguyen system in order to compensate for channel distortion in the communications channel. The Nguyen system, now incorporating the Malvar teaching of using non-inverse post processing filters, has a majority of the features of claim 1, but still fails to disclose wherein the pre- processing filter is more relaxed and the post-processing filter is more aggressive relative to filters that are respectively inverses of the other, as in the claim. Kikuchi discloses the use of a temporal/spatial filter (Kikuchi: figure 16, element 400; figure 18, element 410) and discloses making the filtering more intense for (i.e. more aggressive) for smaller adjacent pixel differences and less intense (i.e. more relaxed) for larger adjacent pixel values (Kikuchi: column 15, lines 9-56) in order to prevent blurring and mosquito noise (Kikuchi: column 14, lines 50-63; column 15, lines 5-8). Accordingly, given this teaching it would have been further obvious for one of ordinary skill in art at the time of the invention to further

adaptively implement the relaxed/aggressive filtering of Kikuchi into the Nguyen-Malvar combination in order to have the filtering prevent blurring and mosquito noise in the encoded signal. The Nguyen system, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has all of the features of claim 1.

Regarding claim 3, the Nguyen system, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the pre- processing filter has eigenvalues that are less than that of a filter that is an inverse of the post-processing filter (Nguyen: column 6, lines 5-25), as in the claim.

Regarding claim 4, the Nguyen system, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the post- processing filter has eigenvalues that are greater than that of a filter that is an inverse of the pre-processing filter (Malvar: column 6, lines 5-25), as in the claim.

Regarding claim 5, the Nguyen system, now incorporating the Malvar teaching of using non-inverse post processing filters, has wherein the pre- processing filter has eigenvalues and the post-processing filter has eigenvalues (Malvar: column 6, lines 5-25), such that a product of the filters' eigenvalues is less than one (Kikuchi: column 21, lines 60-67; column 22, lines 1-25), as in the claim.

Nguyen discloses a digital media signal processing system (Nguyen: figures 3A-3B) comprising: a block transform-based codec for compressively encoding transform-coding blocks of a digital media signal to form a compressed representation of the digital media signal at encoding (Nguyen: column 2, lines 25-30), and to decode blocks from the compressed

representation to reconstruct the digital media signal at decoding (Nguyen: column 2, lines 30-35); a pre-processing filter for applying to overlapping blocks that overlap adjacent of the transform-coding block of the digital media signal prior to encoding by the block transform-based codec to effect spatial-domain lapped transform of the digital media signal (Nguyen: column 4, lines 25-40), a post-processing filter for applying to overlapping blocks that overlap adjacent of the decoded blocks after decoding by the block transform-based codec (Nguyen: column 4, lines 45-65), as in claim 9. However, Nguyen fails to discloses using a compression quality parameter for the block based transform, a pair of pre-processing filters and post-processing filters, and a switch for selecting a pair of pre-processing and post-processing filters from the set for use with the block transform-based codec according to a compression quality parameter, as in the claim. Malvar discloses the use of multiple filters, both pre-processing and post-processing, and a switch of for selecting the between the various pre-processing and post-processing filter pairs (Malvar: column 7, lines 25-35: windows of modulated lapped orthogonal transforms) as based on a quality parameter (Malvar: column 5, lines 10-20) in order to minimize block artifacts and minimal overall coding distortion (Malvar: column 5, lines 65-67; column 6, lines 1-4). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate Malvar's teachings of parameter dependent pre/post processing filter pairs, into the Nguyen system in order to have the Nguyen system minimize block artifacts and minimal overall coding distortion. The Nguyen system, now incorporating Malvar's teachings of parameter dependent pre/post processing filter pairs, has a majority of the features of claim 9. However, the Nguyen-Malvar combination fails to disclose using a compression quality parameter as in the claim. Kikuchi discloses the use of adaptive

filtering (Kikuchi: column 14, lines 50-55; column 15, lines 1-4) based on the use of a compression quality parameter (Kikuchi: column 7, lines 33-54) in order to prevent blurring and mosquito noise (Kikuchi: column 14, lines 56-63; column 15, lines 5-8). Accordingly, given the Kikuchi teaching, it would have been further incorporate the tertiary reference's teaching of using a compression quality parameter to set up adaptive filtering, into the Nguyen-Malvar combination in order to prevent blurring and mosquito noise. The Nguyen system, now incorporating Malvar's teachings of parameter dependent pre/post processing filter pairs and Kikuchi's teaching of using a compression quality parameter to set up adaptive filtering, has all of the features of claim 9.

Regarding claim 10, the Nguyen system, now incorporating Malvar's teachings of parameter dependent pre/post processing filter pairs and Kikuchi's teaching of using a compression quality parameter to set up adaptive filtering, has wherein the compression quality parameter is a quantization parameter (Malvar: column 3, lines 29-40 & Kikuchi: column 1, lines 45-60), as in the claim.

Regarding claim 11, the Nguyen system, now incorporating Malvar's teachings of parameter dependent pre/post processing filter pairs and Kikuchi's teaching of using a compression quality parameter to set up adaptive filtering, has wherein the block transform-based codec explicitly encodes a value of the compression quality parameter into the compressed representation at encoding (Malvar: column 4, lines 55-65 & Kikuchi: column 2, lines 60-67; column 3, lines 1-4), as in the claim.

Regarding claim 12, the Nguyen system, now incorporating Malvar's teachings of parameter dependent pre/post processing filter pairs and Kikuchi's teaching of using a

compression quality parameter to set up adaptive filtering, has wherein the switch operates to enable processing of the spatial-domain lapped transform by a pre-processing and post-processing filter pair when the compression quality parameter is indicative of low quality, and disable processing by the filter pair when the compression quality parameter is indicative of high quality (Kikuchi: column 12, lines 45-60), as in the claim.

Regarding claim 13, the Nguyen system, now incorporating Malvar's teachings of quality parameter dependent pre/post processing filter pairs, has wherein the switch operates to select among a bank of plural filter pairs having progressively more relaxed pre-processing filter and progressively more aggressive post-processing filter as the compression quality parameter is indicative of decreasing quality (Kikuchi: column 11, lines 40-60), as in the claim.

Nguyen discloses a digital signal encoder device for encoding a digital media signal according to a digital media block-transform-based codec (Nguyen: figures 3A-3B) applying a post-processing filter at decoding to overlapping blocks that overlap adjacent decoded transform-coded blocks (Nguyen: column 2, lines 30-35), comprising: a forward block transform for applying on a block basis to the digital media signal to transform the blocks into a transform-domain representation for encoding in a compressed representation of the digital media signal (Nguyen: column 2, lines 30-35); and a pre-processing filter for applying to overlapping blocks that overlap adjacent of the transform blocks of the digital media signal prior to the forward block transform to effect spatial-domain lapped transform of the digital media signal (Nguyen: column 4, lines 25-40), as in claim 14. However, Nguyen fails to disclose wherein the post-processing filter is not an inverse of the pre-processing filter, as in the claim. But Malvar discloses that having a post processing filter that is not a direct inverse of a pre-processing filter

for a lapped transform (Malvar: column 5, lines 5-15) is known and advantageous especially if one wants to also account channel distortion (Malvar: column 7, lines 60-67). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the Malvar teaching of using non-inverse post processing filters into the Nguyen system in order to compensate for channel distortion in the communications channel. The Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters, has all of the features of claim 14. However, Nguyen fails to disclose wherein the post- processing filter is not an inverse of the pre-processing filter or wherein the pre- processing filter is more relaxed and the post-processing filter is more aggressive relative to filters that are respectively inverses of the other, as in the claim. But Malvar discloses that having a post processing filter that is not a direct inverse of a pre-processing filter (Malvar: column 2, lines 5-25) for a lapped orthogonal transform (Malvar: column 5, lines 5-15) is known and advantageous especially if one wants to also account for channel distortion (Malvar: column 7, lines 60-67). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the Malvar teaching of using non-inverse post processing filters into the Nguyen digital signal encoder in order to compensate for channel distortion in the communications channel. The Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters, has a majority of the features of claim 1, but still fails to disclose wherein the pre- processing filter is more relaxed and the post-processing filter is more aggressive relative to filters that are respectively inverses of the other, as in the claim. Kikuchi discloses the use of a temporal/spatial filter (Kikuchi: figure 16, element 400; figure 18, element 410) and discloses making the filtering more intense for (i.e. more

aggressive) for smaller adjacent pixel differences and less intense (i.e. more relaxed) for larger adjacent pixel values (Kikuchi: column 15, lines 9-56) in order to prevent blurring and mosquito noise (Kikuchi: column 14, lines 50-63; column 15, lines 5-8). Accordingly, given this teaching it would have been further obvious for one of ordinary skill in art at the time of the invention to further adaptively implement the relaxed/aggressive filtering of Kikuchi into the Nguyen-Malvar combination in order to have the filtering prevent blurring and mosquito noise in the encoded signal. The Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has all of the features of claim 14.

Regarding claim 16, the Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the pre- processing filter has eigenvalues that are less than that of a filter that is an inverse of the post-processing filter (Nguyen: column 6, lines 5-25), as in the claim.

Regarding claim 17, the Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the post- processing filter has eigenvalues that are greater than that of a filter that is an inverse of the pre-processing filter (Malvar: column 6, lines 5-25), as in the claim.

Regarding claim 18, the Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the pre- processing filter has eigenvalues and the post-

processing filter has eigenvalues (Malvar: column 6, lines 5-25), such that a product of the filters' eigenvalues is less than one (Kikuchi: column 21, lines 60-67; column 22, lines 1-25), as in the claim.

Regarding claim 19, the Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the range reduction operation is a clipping of the coefficient values to remain within a limited range (Nguyen: column 4, lines 45-65), as in the claim.

Regarding claim 20, the Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the range reduction operation clips values of the coefficient to an input value range of the block transform-based codec (Nguyen: column 4, lines 45-65), as in the claim.

Regarding claim 21, the Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the block transform- based codec has a compression quality parameter (Kikuchi: column 7, lines 33-53), the device comprising: a set of pre-processing filters (Malvar: column 7, lines 25-35); and a switch for selecting the pre-processing filter from the set according to the quality parameter for use in encoding the digital media signal (Malvar: column 7, lines 15-21), as in the claim.

Regarding claim 22, the Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using

relaxed/aggressive filtering, has wherein the compression quality parameter is a quantization parameter (Malvar: column 3, lines 29-40 & Kikuchi: column 1, lines 45-60), as in the claim 10.

Regarding claim 23, the Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the block transform-based codec explicitly encodes a value of the compression quality parameter into the compressed representation at encoding (Malvar: column 4, lines 55-65 & Kikuchi: column 2, lines 60-67; column 3, lines 1-4), as in the claim.

Regarding claim 24, the Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the switch operates to enable processing of the spatial-domain lapped transform by a pre-processing and post-processing filter pair when the compression quality parameter is indicative of low quality, and disable processing by the filter pair when the compression quality parameter is indicative of high quality (Kikuchi; column 12, lines 45-60), as in the claim.

Nguyen discloses a method of compressively encoding and decoding a digital media signal (Nguyen: column 2, lines 55-65), comprising: at encoding: applying a forward block transform to a group of adjoining transform-coding blocks of the digital media signal to produce transform-domain representations of the blocks (Nguyen: column 1, lines 45-55); and applying a pre-processing filter to overlapping blocks that overlap adjacent of the transform-coding blocks of the digital media signal prior to the forward block transform to effect spatial-domain lapped transform of the digital media signal (Nguyen: column 4, lines 25-40); and at decoding: applying

an inverse block transform to the transform-domain representation of the transform-coding blocks (Nguyen: column 4, lines 45-65); and applying a post-processing filter following the inverse block transform to the overlapping blocks (Nguyen: column 5, lines 10-30), as in claim 26. However, Nguyen fails to disclose wherein the post- processing filter is not an inverse of the pre-processing filter or wherein the pre- processing filter is more relaxed and the post-processing filter is more aggressive relative to filters that are respectively inverses of the other, as in the claim. But Malvar discloses that having a post processing filter that is not a direct inverse of a pre-processing filter (Malvar: column 2, lines 5-25) for a lapped orthogonal transform (Malvar: column 5, lines 5-15) is known and advantageous especially if one wants to also account for channel distortion (Malvar: column 7, lines 60-67). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the Malvar teaching of using non-inverse post processing filters into the Nguyen method in order to compensate for channel distortion in the communications channel. The Nguyen method, now incorporating the Malvar teaching of using non-inverse post processing filters, has a majority of the features of claim 26, but still fails to disclose wherein the pre- processing filter is more relaxed and the post-processing filter is more aggressive relative to filters that are respectively inverses of the other, as in the claim. Kikuchi discloses the use of a temporal/spatial filter (Kikuchi: figure 16, element 400; figure 18, element 410) and discloses making the filtering more intense for (i.e. more aggressive) for smaller adjacent pixel differences and less intense (i.e. more relaxed) for larger adjacent pixel values (Kikuchi: column 15, lines 9-56) in order to prevent blurring and mosquito noise (Kikuchi: column 14, lines 50-63; column 15, lines 5-8). Accordingly, given this teaching it would have been further obvious for one of ordinary skill in

art at the time of the invention to further adaptively implement the relaxed/aggressive filtering of Kikuchi into the Nguyen-Malvar combination in order to have the filtering prevent blurring and mosquito noise in the encoded signal. The Nguyen method, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has all of the features of claim 26.

Regarding claim 28, the Nguyen method, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the pre- processing filter has eigenvalues that are less than that of a filter that is an inverse of the post-processing filter (Nguyen: column 6, lines 5-25), as in the claim.

Regarding claim 29, the Nguyen method, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the post- processing filter has eigenvalues that are greater than that of a filter that is an inverse of the pre-processing filter (Malvar: column 6, lines 5-25), as in the claim.

Regarding claim 30, the Nguyen method, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the pre- processing filter has eigenvalues and the post-processing filter has eigenvalues (Malvar: column 6, lines 5-25), such that a product of the filters' eigenvalues is less than one (Kikuchi: column 21, lines 60-67; column 22, lines 1-25), as in the claim.

Regarding claim 31, the Nguyen method, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the range reduction operation is a clipping of the coefficient values to remain within a limited range (Nguyen: column 4, lines 45-65), as in the claim.

Regarding claim 32, the Nguyen method, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the range reduction operation clips values of the coefficient to an input value range of the block transform-based codec (Nguyen: column 4, lines 45-65), as in the claim.

Regarding claim 33, the Nguyen method, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the block transform- based codec has a compression quality parameter (Kikuchi: column 7, lines 33-53), has selecting a pair of pre-processing filter and a post-processing filter from the set according to the compression quality parameter for use in encoding the digital media signal (Malvar: column 7, lines 15-21), as in the claim.

Regarding claim 34, the Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the compression quality parameter is a quantization parameter (Malvar: column 3, lines 29-40 & Kikuchi: column 1, lines 45-60), as in the claim.

Regarding claim 35, the Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the block transform-based codec explicitly encodes a value of the compression quality parameter into the compressed representation at encoding (Malvar: column 4, lines 55-65 & Kikuchi: column 2, lines 60-67; column 3, lines 1-4), as in the claim.

Regarding claim 36, the Nguyen digital signal encoder, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using

relaxed/aggressive filtering, has enabling processing of the spatial-domain lapped transform by a pre-processing and post-processing filter pair when the compression quality parameter is indicative of low quality, and disabling processing by the filter pair when the compression quality parameter is indicative of high quality (Kikuchi; column 12, lines 45-60), as in the claim.

Regarding claim 37, the Nguyen method, now incorporating the Malvar teaching of using non-inverse post processing filters and the Kikuchi teaching of using relaxed/aggressive filtering, has wherein the block transform- based codec has a compression quality parameter (Kikuchi: column 7, lines 33-53), has selecting among a bank of plural filters having more relaxed pre-processing filters and progressively more aggressive post-processing filters (Malvar: column 7, lines 15-21) as the compression quality parameter is indicative of decreasing quality (Kikuchi: column 11, lines 35-45), as in the claim.

Nguyen discloses a digital media signal decoder device for decoding a digital media signal encoded by a block-transform-based codec (Nguyen: figures 4A-4B) that operates compressively to encode transform-coding blocks of a digital media signal to form compressed digital media signaled in the compressed digital media signal (Nguyen: column 2, lines 30-35), the block transform based coded applying a pre-processing filter applied on blocks overlapping adjacent of the transform-coding blocks to effect a spatial-domain lapped transform (Nguyen: column 4, lines 25-4), the digital media signal decoder comprising: a block transform based decoder for decoding the transform coded blocks (Nguyen: column 4, lines 40-45); and a post processing filter for applying to overlapping blocks that overlap adjacent of decoded blocks after decoding by the block transform based decoder (Nguyen: column 4, lines 55-60), as in claim 38. However, Nguyen fails to discloses using a compression quality parameter for the block based

transform, a pair of post-processing filters, and a switch for selecting a pair of and post-processing filters from the set for use with the block transform-based codec according to a compression quality parameter, as in the claim. Malvar discloses the use of multiple filters, both pre-processing and post-processing, and a switch of for selecting the between the various pre-processing and post-processing filter pairs (Malvar: column 7, lines 25-35: windows of modulated lapped orthogonal transforms) as based on a quality parameter (Malvar: column 5, lines 10-20) in order to minimize block artifacts and minimal overall coding distortion (Malvar: column 5, lines 65-67; column 6, lines 1-4). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate Malvar's teachings of parameter dependent pre/post processing filter pairs, into the Nguyen system in order to have the Nguyen decoder minimize block artifacts and minimal overall coding distortion. The Nguyen decoder, now incorporating Malvar's teachings of parameter dependent pre/post processing filter pairs, has a majority of the features of claim 9. However, the Nguyen-Malvar combination fails to disclose using a compression quality parameter as in the claim. Kikuchi discloses the use of adaptive filtering (Kikuchi: column 14, lines 50-55; column 15, lines 1-4) based on the use of a compression quality parameter (Kikuchi: column 7, lines 33-54) in order to prevent blurring and mosquito noise (Kikuchi: column 14, lines 56-63; column 15, lines 5-8). Accordingly, given the Kikuchi teaching, it would have been further incorporate the tertiary reference's teaching of using a compression quality parameter to set up adaptive filtering, into the Nguyen-Malvar combination in order to prevent blurring and mosquito noise. The Nguyen decoder, now incorporating Malvar's teachings of parameter dependent pre/post

processing filter pairs and Kikuchi's teaching of using a compression quality parameter to set up adaptive filtering, has all of the features of claim 38.

Regarding claim 39, the Nguyen decoder, now incorporating Malvar's teachings of parameter dependent pre/post processing filter pairs and Kikuchi's teaching of using a compression quality parameter to set up adaptive filtering, has wherein the compression quality parameter is a quantization parameter (Malvar: column 3, lines 29-40 & Kikuchi: column 1, lines 45-60), as in the claim.

Regarding claim 40, the Nguyen decoder, now incorporating Malvar's teachings of parameter dependent pre/post processing filter pairs and Kikuchi's teaching of using a compression quality parameter to set up adaptive filtering, has wherein enabling processing of the spatial-domain lapped transform by a pre-processing and post-processing filter pair when the compression quality parameter is indicative of low quality, and disabling processing by the filter pair when the compression quality parameter is indicative of high quality (Kikuchi; column 12, lines 45-60), as in the claim.

Regarding claim 41, the Nguyen decoder, now incorporating Malvar's teachings of parameter dependent pre/post processing filter pairs and Kikuchi's teaching of using a compression quality parameter to set up adaptive filtering, has wherein the block transform-based codec has a compression quality parameter (Kikuchi: column 7, lines 33-53), has selecting among a bank of plural filters having more relaxed pre-processing filters and progressively more aggressive post-processing filters (Malvar: column 7, lines 15-21) as the compression quality parameter is indicative of decreasing quality (Kikuchi: column 11, lines 35-45), as in the claim.

Allowable Subject Matter

4. Claims 42-43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the respective base claims 1 (for claim 43) and 38 (for claim 42) and any intervening claims.

The recitation of the specific matrix from the post processing filters is not anticipated nor obvious over the art of record. Accordingly, claim 42-43 are amended as indicated above, and rejected claims 1, 3-5, 9-14, 16-26, 28-41 are canceled, the application would be placed in a condition for allowance.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (571)-272-7337. The examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571)-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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